CLAIMS

1) A method of optimizing operation of a unit intended for separation of the constituents of a feed, comprising a separation loop consisting of the interconnection of a series of beds containing a solid adsorbent material forming several zones delimited by feed (F) and solvent (S) injection points and extraction points for discharge, out of the loop, of an extract (Ex) containing a first constituent (Px) of the feed, and of a raffinate (Raf), injection points and extraction points switching means allowing to simulate countercurrent displacement of the beds and means for measuring operating variables, comprising using a control algorithm for bringing the separation unit to a working point where the purity of the first constituent in the extract and the yield of the separation unit as regards production of this first constituent are brought to specified values, characterized in that, for a given value of concentration ($Eb_{extract}$), in the extract, of a second constituent (Eb) of the feed, the set value of the concentration (Px_{zone1}) of the first constituent is adjusted manually in a zone (Z1) located between the solvent injection point and the extract extraction point so as to minimize the solvent/feed ratio (S/F).

2) A method as claimed in claim 1, characterized in that said concentration value ($Eb_{extract}$) is adjusted so as to maximize the capacity of the separation unit within the operating stability limits of said unit.

3) A method of optimizing operation of a unit intended for separation of the constituents of a feed, comprising a separation loop consisting of the interconnection of a series of beds containing a solid adsorbent material forming several zones delimited by feed (F) and solvent (S) injection points and extraction points for discharge, out of

the loop, of an extract (Ex) containing a first constituent (Eb) of the feed, and of a raffinate (Raf), injection points and extraction points switching means allowing to simulate countercurrent displacement of the beds and means for measuring operating variables, comprising using a control algorithm for bringing the separation unit to a working point where the purity of the first constituent in the extract and the yield of the separation unit as regards production of this first constituent are brought to specified values, characterized in that the set value of concentration ($Eb_{extract}$), in the extract, of a second constituent (Eb) of the feed, is adjusted so as to obtain maximization of the capacity of the separation unit within the operating stability limits of said separation unit.

4) A method as claimed in claim 1 or 2, characterized in that said set value of concentration (Px_{zone1}) is adjusted by means of a monovariable optimizer.

5) A method as claimed in claim 3, characterized in that said set value of concentration ($Eb_{extract}$) in the extract is adjusted in the range between 0.02 % and 2 %.

6) A method as claimed in any one of the previous claims, characterized in that the first constituent and the second constituent of the feed are paraxylene and ethylbenzene respectively.